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Abstract

A plurality of resist membranes are formed on a semiconductor wafer to be etched. The top resist is patterned by light beam, laser beam, X-rays, or electron beams to form a mask. The wafer is transferred to a first unit (2) into which discharging gas is introduced and plasma is generated in order to dry-etch the multilayer resists. The multilayer is transferred to a second unit (3) in a vacuum. In the second unit, the membrane of the wafer is dry-etched to a predetermined depth. The wafer then is transferred to a third unit (4) in a vacuum where part of the resist is removed according to the mask pattern and treatment of the resist by the plasma.